ABSTRACT

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Title of diploma thesis: The Optimization of the growth of the plant tissue culture of *Juniperus virginiana*

The main goal of this diploma thesis lies in the optimization of cultivation medium composition for the tissue culture of *Juniperus virginiana* (varieties 'Hetzii', 'Glauca', 'Grey Owl'). The best results of all tested media were achieved by using Schenk and Hildebrandt medium with an addition of α-NAA (3.0 $mg.l^{-1}$), kinetin (0.2 $mg.l^{-1}$) and ascorbic acid (15.0 $mg.l^{-1}$). The cultures were cultivated at the temperature of 25 °C and light period of 16 hours light/8 hours dark. The growth curve for the tissue culture of *Juniperus virginiana* 'Glauca' was set for 2 different cases: with and without the addition of phenylalanin (biogenetic precursor of phenylpropans biosynthesis). The maximal growth was reached on 35^{th} day of the cultivation in both cases, phenylalanin increases the growth rate by 29.65 %.